

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



534823

(43) International Publication Date  
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number  
WO 2004/048103 A1

(51) International Patent Classification<sup>7</sup>:

B41J 2/05

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/AU2003/001507

(22) International Filing Date:

17 November 2003 (17.11.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10/303,348 23 November 2002 (23.11.2002) US

(71) Applicant (for all designated States except US): SILVERBROOK RESEARCH PTY LTD [AU/AU]; 393 Darling Street, Balmain, New South Wales 2041 (AU).

(72) Inventor; and

(75) Inventor/Applicant (for US only): SILVERBROOK, Kia [AU/AU]; Silverbrook Research Pty Ltd, 393 Darling Street, Balmain, New South Wales 2041 (AU).

(74) Agent: SILVERBROOK, Kia; Silverbrook Research Pty Ltd, 393 Darling Street, Balmain, New South Wales 2041 (AU).

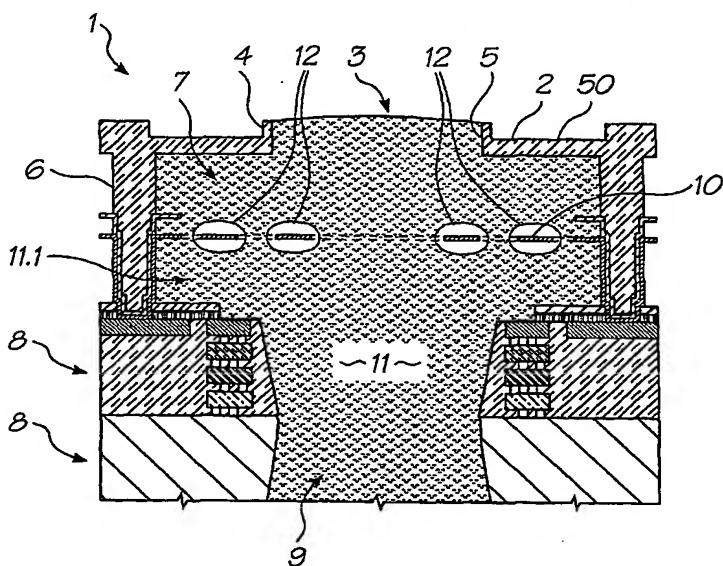
(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: THERMAL INK JET PRINthead WITH HIGH NOZZLE AREAL DENSITY



(57) Abstract: There is disclosed an inkjet printhead which comprises a plurality of nozzles (3) and one or more heater elements (10) corresponding to each nozzle (3). Each heater element is configured to heat a bubble forming liquid in the printhead to a temperature above its boiling point to form a gas bubble (12) therein. The generation of the bubble causes the ejection of a drop of an ejectable liquid (such as ink) through the respective corresponding nozzle, to effect printing. The printhead has a substrate and each nozzle has a nozzle aperture opening through a surface of the substrate such that the areal density of the nozzle relative to the substrate surface exceeds 10,000 nozzles per square cm.

WO 2004/048103 A1